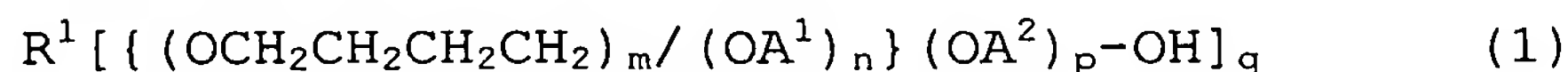


## CLAIMS

1. A lubricant for water-based metal working oil containing polyether (E) represented by the following  
5 general formula (1) and having an HLB of 6.1 to 16.0 and a weight-average molecular weight of 500 to 10,000



[in the formula,  $R^1$  denotes a residue such that at least one hydroxyl group is removed from a compound with a carbon  
10 number of 1 to 24 having 1 to 6 hydroxyl group(s);  $A^1$  denotes an alkylene group with a carbon number of 2 to 4 except a 1,4-butylene group;  $A^2$  denotes an alkylene group with a carbon number of 2 to 4; m denotes an integer of 1 or more having an average of 1 to 120; n and p each denotes  
15 an integer of 0, 1 or more such that an average of (n+p) is 1 to 200, and n and p are not simultaneously 0; q denotes an integer of 1 to 6; and  $\{(OCH_2CH_2CH_2CH_2)_m/(OA^1)_n\}$  in a case where n is an integer of 1 or more denotes a random bond].

20 2. The lubricant according to Claim 1, wherein n or p in the general formula (1) is 0.

3. The lubricant according to Claim 1 or 2, wherein  $R^1$  in the general formula (1) is a residue  
25 such that all hydroxyl groups are removed from dihydric or trihydric alcohol.

4. The lubricant according to any one of Claims 1 to 3,  
30 wherein  $A^2$  in the general formula (1) is an ethylene group.

5. The lubricant according to any one of Claims 1 to 4,  
35 wherein  $m/(m+n+p)$  in the general formula (1) is 0.05

to 0.8.

6. A lubricant composition for water-based metal working oil

5        which comprises the polyether (E) according to any one of Claims 1 to 5 and other additives.

7. The lubricant composition according to Claim 6, wherein other additives are aliphatic carboxylic acid  
10    with a carbon number of 8 to 22 and/or a salt thereof (F).

8. The lubricant composition according to Claim 7, wherein (F)/(E) is 0.03 to 5.0 at a weight ratio.

15        9. The lubricant composition according to any one of Claims 6 to 8,

          which contains, as other additives, one kind or more selected from the group consisting of an antioxidant, an extreme-pressure additive, a rust preventive and an  
20    antifoaming agent.

10. The lubricant composition according to any one of Claims 6 to 9,

          which does not contain hydrocarbon oil as other  
25    additives.

11. A water-based metal working oil comprising water and the lubricant according to any one of Claims 1 to 5 or the lubricant composition according to any one of Claims 6  
30    to 10,

          said water-based metal working oil containing polyether (E) of 0.01 to 95 weight % in quantity on a basis of a weight of said metal working oil.

35        12. The water-based metal working oil according to

Claim 11,  
which is of solution type or soluble type.

13. The water-based metal working oil according to  
5 Claim 11 or 12,  
which is employed for working aluminum, aluminum  
alloy, iron and/or steel.

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